

## ABSTRACT

A process reinforcing a silica glass substance, such as a silica glass crucible, is provided without intermixing an impurity. The process comprises forming a silica glass powder layer on a surface of the silica glass substance, and crystallizing said silica glass powder layer under high temperature. As for a silica glass crucible, the process for reinforcing the silica glass crucible and the reinforced silica glass crucible are provided, wherein the silica glass powder layer on the whole or a part of the surface of the crucible is formed and then, crystallized under a temperature at the melting of a silicon raw material being charged into said quartz glass crucible.